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U.S. Department of Energy  
Rocky Flats Environmental  
Technology Site  
Restoration Management

DOE-RFFO  
ENVIRONMENTAL  
RESTORATION  
PROGRAM

Monthly Report  
for July 1995

DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
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ADMIN RECORD



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## Table of Contents

EXECUTIVE SUMMARY .....	1
SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JULY 1995 .....	1
INTERAGENCY AGREEMENT (IAG) .....	
PERFORMANCE INDICATORS FOR MONTHLY REPORT .....	3
PROBLEMS AND PROGRAMMATIC ISSUES .....	5
NEAR-TERM IAG TABLE 6 MILESTONES .....	6
SECTION 1.0 INTRODUCTION .....	8
SECTION 2.0 PROJECT STATUS .....	10
2.1    OU 1 - 881 HILLSIDE AREA .....	11
2.1.1    OU 1 ASSESSMENT .....	11
2.1.2    OU 1 REMEDIATION .....	13
2.2    OU 2 - 903 PAD, MOUND, AND EAST TRENCHES .....	15
2.2.1    OU 2 ASSESSMENT .....	15
2.2.2    OU 2 REMEDIATION .....	18
2.3    OU 3 - OFFSITE AREAS .....	21
2.4    OU 4 - SOLAR EVAPORATION PONDS .....	25
2.4.1    OU 4 ASSESSMENT .....	25
2.4.2    OU 4 REMEDIATION .....	27
2.5    OU 5 - WOMAN CREEK .....	31
2.6    OU 6 - WALNUT CREEK .....	35
2.7    OU 7 - PRESENT LANDFILL .....	37
2.1A   INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14) .....	39
2.8    OU 8 - 700 AREA .....	41
2.9    OU 9 - ORIGINAL PROCESS WASTE LINES .....	43
2.10   OU 10 - OTHER OUTSIDE CLOSURES .....	47
2.11   OU 11 - WEST SPRAY FIELD .....	51
2.12   OU 12 - 400/800 AREA .....	53
2.13   OU 13 - 100 AREA .....	55
2.14   OU 14 - RADIOACTIVE SITES .....	57
2.15   OU 15 - INSIDE BUILDING CLOSURES .....	59
2.16   SITEWIDE ACTIVITIES .....	61
SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING .....	63
3.1    SURFACE WATER AND SEDIMENTS .....	63
3.2    SOILS .....	64
3.3    GROUNDWATER .....	64
SECTION 4.0 SUBCONTRACTOR IDENTIFICATION .....	67
ACRONYMS .....	70

## **EXECUTIVE SUMMARY**

### **SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JULY 1995**

On July 31, 1995 the Remedy Lands Semi Annual Report for OU 3 was delivered to DOE/RFFO.

Construction of the W. 88th Avenue Air Monitoring Station was completed on July 28, 1995.

Repackaging of metal containers holding OU 4 wastes at the 904 Pad has been completed.

Final approval has been received from the regulatory agencies for the OU 6 Draft Final ERAM Site Conceptual Model and the Draft Final Ecological Chemical of Concern Methodology.

On July 27, 1995 the Landfill IM/IRA Decision Document was transmitted to Kaiser-Hill.

The OU 11 Preliminary Draft CAD/ROD has been completed and is being reviewed internally.

**INTERAGENCY AGREEMENT (IAG)  
PERFORMANCE INDICATORS FOR MONTHLY REPORT**

<u>Number of IAG Table Six Milestones To Date</u>	<u>Current Fiscal Year (FY) 95 (10/1/94 - 9/30/95)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	15	143
Met	14	109
Extensions Granted	15	64
Extensions Denied	0	8
Remaining this FY95	20	N/A
Added	1	11
Deleted	3	6

Deliverables in Review  
by Regulators

Project

Date Submitted/  
Completed

Date review was completed  
EPA CDPHE

OU 1 Revised Draft  
Proposed Plan

13 Feb 95

OU 7 Revised Proposed  
Action Memoranda

15 Jun 95

IM/IRA Status

Gallons Treated

OU 1 881 Hillside Treatment	3,026,794 gallons
OU 2 Surface Water IM/IRA Treatment	24,846,325 gallons
OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)	9,911,788 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Draft Responsiveness Summary	19 Sep 95	19 Sep 95	Extension request in progress
OU 2 Final Phase II RFI/RI Report	21 Sep 95	21 Sep 95	On schedule
OU 3 Draft Phase I RFI/RI Report	30 Oct 95	15 Sep 95	Ahead of schedule
OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	To be determined	See footnote <sup>2</sup>
OU 5 Draft Phase I RFI/RI Report	1 Nov 95	1 Nov 95	On schedule
OU 6 Draft Phase I RFI/RI Report	2 Oct 95	2 Oct 95	On schedule
OU 7 Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	31 Aug 95	On schedule
OU 9 Final Phase II RFI/RI Work Plan	7 Aug 95	To be determined	See footnote <sup>1</sup>
OU 9 Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	To be determined	See footnote <sup>1</sup>
OU 10 Draft Phase II RFI/RI Work Plan	27 Jun 95	To be determined	See footnote <sup>1</sup>
OU 10 Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	To be determined	See footnote <sup>1</sup>
OU 10 Final Phase II RFI/RI Work Plan	21 Nov 95	To be determined	See footnote <sup>1</sup>
OU 11 Submit Draft Responsiveness Summary	7 Sep 95	07 Sep 95	On schedule
OU 11 Draft Corrective Action Decision/ Record of Decision	7 Sep 95	07 Sep 95	On schedule
OU 11 Submit Final Responsiveness Summary	29 Sep 95	29 Sep 95	On schedule
OU 11 Submit Final Corrective Action Decision Record of Decision	29 Sep 95	29 Sep 95	On schedule

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 11 Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95	10 Oct 95	Proposed elimination
OU 15 Final Corrective Action Decision/ Record of Decision	30 Sep 95	10 Aug 95	New milestone

<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Completion</u>
Date Comments			
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	To be determined	See footnote 1
OU 8 Final Phase I RFI/RI Report	12 Jul 94	To be determined	See footnote 1
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	To be determined	See footnote 1
OU 9 Final Phase I RFI/RI Report	6 Sep 94	To be determined	See footnote 1
OU 9 Draft Phase II RFI/RI Work Plan	10 Mar 95	To be determined	See footnote 1
OU 9 Draft Phase I Proposed IM/IRA Decision Document	1 May 95	To be determined	See footnote 1
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	To be determined	See footnote 1
OU 10 Final Phase I RFI/RI Report	30 Jan 95	To be determined	See footnote 1
OU 10 Draft Phase I Proposed IM/IRA Decision Document	26 May 95	To be determined	See footnote 1
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	To be determined	See footnote 1
OU 12 Final Phase I RFI/RI Report	15 Sept 94	To be determined	See footnote 1
OU 13 Draft Phase I RFI/RI Report	8 Aug 94	To be determined	See footnote 1
OU 13 Final Phase I RFI/RI Report	11 Jan 95	To be determined	See footnote 1
OU 14 Draft Phase RFI/RI Report	20 Dec 94	To be determined	See footnote 1
OU 14 Final Phase I RFI/RI Report	23 May 95	To be determined	See footnote 1

<u>Extended Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 2 Corrective/Remedial Design Work Plan	15 Jun 95	3 Mar 98	Extension approved
OU 2 Draft Title II Design	15 Feb 96	3 Nov 98	Extension approved
OU 2 Final Title II Design	14 Jun 96	3 Mar 99	Extension approved
OU 2 Begin Corrective/Remedial Action Construction	20 Jan 97	11 Oct 99	Extension approved
OU 2 Complete Corrective/Remedial Action Construction	20 Jul 98	27 Apr 01	Extension approved
OU 2 Submit Performance Assessment Report	15 Oct 98	26 Oct 01	Extension approved

<sup>1</sup> The milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs (OUs 8,9,10,12,13, and 14) are under a Stop Work Order directive received March 7, 1995 that was agreed to by the regulatory agencies and DOE.

<sup>2</sup> This milestone will be missed because of reevaluation of the project's technical scope and funding restraints. A forecast date is not known. A revised date will be renegotiated.

## **PROBLEMS AND PROGRAMMATIC ISSUES**

Due to very wet conditions in June, the OU 4 Modular tanks have no remaining usable volume. Capacity limitations at Building 374 have limited the amount of water processed from the tanks.

# NEAR-TERM IAG TABLE 6 MILESTONES

<u>OU #</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDPHE</u>	<u>Status</u>
6	Submit Draft Phase I RFI/RI Report	02-Oct-95	Extension approved.
10	Submit Draft Phase II RFI/RI Work Plan	27-Jun-95	On schedule
9	Submit Final Phase II RFI/RI Work Plan	7-Aug-95	See Footnote 1
4	Phase I Final IM/IRA DD and Final Responsiveness Summary	29-Aug-95	See Footnote 2
7	Submit Draft Phase I Proposed IM/IRA Decision Document	31-Aug-95	On schedule
1	Draft Responsiveness Summary	19-Sep-95	On hold 3
2	Submit Final Phase II RFI/RI Report	21-Sep-95	On schedule
9	Submit Final Phase I Proposed IM/IRA Decision Document	27-Sep-95	See Footnote 1
15	Submit Final Corrective Action Decision/Record of Decision	30-Sep-95	On schedule
11	Submit Draft Phase I Proposed IM/IRA Decision Document	10-Oct-95	Eliminated
10	Submit Final Phase I Proposed IM/IRA Decision Document	24-Oct-95	See Footnote 1
3	Submit Draft Phase I RFI/RI Report	30-Oct-95	Ahead of Schedule
5	Submit Draft Phase I RFI/RI Report	1-Nov-95	On schedule
10	Submit Final Phase II RFI/RI Work Plan	21-Nov-95	See Footnote 1
4	Final IM Title II Design	18-Dec-95	See Footnote 2
1	Final Responsiveness Summary	22-Dec-95	On schedule
1	Draft Corrective Action Decision/ Record of Decision	22-Dec-95	On hold 3
7	Submit Draft Final Phase I IM/IRA Decision Document	5-Jan-96	On hold 3
9	Submit IM/IRA Responsiveness Summary	8-Feb-96	See Footnote 1
6	Submit Final Phase I RFI/RI Report	21-Feb-96	On schedule
10	Submit IM/IRA Responsiveness Summary	6-Mar-96	See Footnote 1
11	Submit Final Phase I Proposed IM/IRA Decision Document	14-Mar-96	Proposed Elimination
1	Submit Final Corrective Action Decision/ Record of Decision	29-Mar-96	On hold 3
1	Submit Corrective Design/Remedial Design Work Plan	29-Mar-96	On hold 3
7	Submit IM/IRA Responsiveness Summary	1-Apr-96	On schedule
5	Submit Final Phase I RFI/RI Report	2-Apr-96	On schedule
4	Submit Draft Phase II RFI/RI Report	16-Apr-96	See Footnote 2
9	Submit Final Phase I IM/IRA Decision Document	7-May-96	See Footnote 1
7	Submit Draft IM Title II Design	30-May-96	On schedule
2	Submit Corrective Design/Remedial Design Work Plan	3-Mar-98	Extension requested
2	Submit Draft Title II Design	3-Nov-98	On schedule

1 This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Department of Energy (DOE) Stop Work Order directive until agreement can be reached with the regulatory agencies on the IA OU reconfiguration.

2 This milestone will be missed because of reevaluation of the project's technical scope and funding restraints. A forecast date is not known. A revised date will be renegotiated.

3 This milestone is in the dispute resolution process of the IAG.

## SECTION 1.0 INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for July 1995. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess and remediate, where necessary, contaminated areas at or adjacent to the DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU), as well as other program activities, are presented in Section 2.0. As required by Paragraph 210 of the IAG, Section 3 contains the schedules for routine environmental sampling. As required by Paragraph 13 of the IAG, Section 4 contains a list that identifies the subcontractors performing work on the program.



## SECTION 2.0 PROJECT STATUS

### 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up Operable Unit (OU) 1 were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Measure (IM)/Interim Remedial Action (IRA) at OU 1 involved the construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater that flows from the OU 1 area. The near-surface water is treated at the 891 treatment facility, which was designed for this purpose, and is released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. The IRA construction was completed in April 1992. A Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the CMS/FS was developed and submitted to the regulatory agencies in February 1995.

#### 2.1.1 OU 1 ASSESSMENT

##### Scope of Work

Changes This Period                      None.

##### Technical Approach

Changes This Period                      None.

##### Interagency Agreement

##### (IAG) Milestone

##### Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92
Submit Final Phase III RFI/RI Report	15 Nov 93
Submit Revised Phase III RFI/RI Report	15 Jun 94
Submit Draft Corrective Measures Study (CMS)/FS	25 Aug 94
Submit Draft Remedial Action Plan/Proposed Plan	13 Feb 95
Submit Final CMS/FS	13 Feb 95
Submit Final Proposed Plan	25 May 95

##### Future IAG Milestones

##### Through Fiscal Year (FY) 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Responsiveness Summary	06 May 94	19 Sep 95	19 Sep 95
Submit Final Responsiveness Summary	03 Aug 94	22 Dec 95	22 Dec 95
Submit Draft Corrective Action Decision/Record of Decision	03 Aug 94	22 Dec 95	22 Sep 95*
Submit Final Corrective Action Decision/Record of Decision	01 Nov 94	29 Mar 96	22 Dec 95*
Submit Draft Title II Design	05 Jul 95	05 Sep 95	30 Nov 96*
Submit Final Title II Design	03 Oct 95	03 Oct 95	21 Nov 96*

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Corrective Action Decision/Record of Decision	01 Nov 94	29 Mar 96	29 Mar 96*
Submit Corrective Design/Remedial Design Work Plan	01 Nov 94	29 Mar 96	29 Mar 96*
Begin Corrective/Remedial Action Construction	07 May 96	07 May 96	26 Jun 97*

\* A Baseline Change Proposal to change the baseline is in progress.

#### **July Work Activity Status**

Provide assistance and technical support to resolve the disputed items in the Proposed Plan.

#### **Technical Memoranda (TM)**

##### Project OU 1 - 881 Hillside

##### **TM 10**

##### **TM Title**

##### **TM Status**

Preliminary Remediation Goals

When preparation was concluded:

Projected date of submittal to EPA/CDPHE:

Actual date of submittal:

Date comments were received:

03 May 94

Submitted

03 May 94

EPA 01 June 94  
CDPHE 26 Jul 94

##### **TM 11**

##### **TM Title**

##### **TM Status**

Alternative Array

When preparation was concluded:

Projected date of submittal to EPA/CDPHE:

Actual date of submittal:

Date when comments were received:

03 May 94

Submitted

03 May 94

EPA 24 May 94  
CDPHE 06 Jun 94

#### **Planned Work for August**

Provide assistance and technical support to resolve the disputed items in the Proposed Plan

Upon resolution of the disputed items in the Proposed Plan, the public comment period will commence. Newspaper ads will be placed for the public hearing of the Proposed Plan. Public reading rooms will be provided with the agency approved Proposed Plan.

#### **Problems**

CDPHE has in concept approved all of our suggested resolutions under the dispute resolution process except for the locations of the monitoring wells and action levels. Since the location of these wells and action levels have been at contention between the regulatory agencies for several months, with little chance of being resolved at the technical staff level, DOE will not achieve closure of OU 1 until the impasse is resolved. DOE has invoked Part 12 of the IAG, initiating the dispute resolution process based on the disapproval of the Proposed Plan and resolution of comments.

#### **Open Items**

Approval of the Proposed Plan

### **2.1.2 OU 1 REMEDIATION**

**Scope of Work  
Changes This Period**

None.

**Technical Approach  
Changes This Period**

None.

**IAG Milestone  
Accomplishments**

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 Treatment Building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones  
Through FY96**

None.

**July Work Activity Status**

Interim Measure/Interim Remedial Action (IM/IRA) Treatment Facility

Normal water treatment continues.

A letter was received from the EPA indicating that treatment of groundwater collected by the French Drain will not be required, if laboratory analysis of representative samples collected from that water shows that the discharge standards of the OU 1 Interim Measure/Interim Remedial Action (IM/IRA) Decision Document are not exceeded. The actual procedures that will be used to accomplish this need to take into account various factors such as holding tank capacity, Maximum volumes collected by the French Drain, and analytical turnaround time, in order to effectively segregate the ground water collected by the French Drain for representative sampling of that water. Contaminated water that is being pumped from the collection well still needs to be treated and must not be mixed with the French Drain water unless both these waters exceed discharge standards.

Equipment from the OU1 and OU 2 treatment facilities are being combined for consolidation into one sitewide treatment facility supporting multiple OUs.

July water treatment totals  
Treated groundwater this period 44,235 gallons  
Total treated to date: (through 31 July 95) 3,026,794 gallons

**Planned Work for August**

Interim Measure/Interim Remedial Action (IM/IRA) Treatment Facility

Normal operations will continue.

The investigation of procedures, systems and capabilities that will be needed to accomplish the proposal for discontinuing French Drain water treatment will continue. Areas of concern include holding tank capacity, maximum volumes collected by the French Drain, and analytical turnaround time, in order to effectively segregate the ground water collected by the French Drain for representative sampling of that water.

**Problems**

None.

**Open Items**

None.

## **2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES**

The contamination at the 903 Pad and Mound Areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources and then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of the small amount of contamination.

A second IM/IRA was established in late 1991. This Subsurface Investigation IM/IRA Environmental Assessment evaluates interim remedial technology actions for removal of residual free-phase Volatile Organic Compound contamination from IHSS 110. The Volatile Organic Compound-removal action involved *in situ* vacuum-enhanced soil vapor extraction technology. The Final Field Report for the OU 2 Detailed Soil Vapor Survey Data was submitted in March 1994, and a pilot test for a soil vapor extraction as specified in the IM/IRA was completed in June 1994. Additionally, extended operations were completed in December 1994, and the Final Pilot Test Report for Test Site No. 1 was issued to the regulatory agencies on November 10, 1994. In March 1995, the implementation of Test Site Nos. 2 and 3 were canceled from the OU 2 soil vapor extraction program.

The Draft OU 2 RFI/RI Report was submitted to the Agencies in May 1995. The Final Report will incorporate the Agencies comments and is scheduled to be delivered September 21, 1995. The OU 2 RFI/RI Report describes the nature and extent of contamination and assesses the risk to human health of different exposure scenarios.

### **2.2.1 OU 2 ASSESSMENT**

#### **Scope of Work**

**Changes This Period**                      None.

#### **Technical Approach**

**Changes This Period**                      None.

#### **IAG Milestone**

##### **Accomplishments**

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93
Submit Preliminary Draft Phase II RFI/RI Report	16 Dec 93
Submit Draft Phase II RFI/RI Report	24 May 95

**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase II RFI/RI Report	09 Aug 93	21 Sep 95	21 Sep 95
Submit Draft CMS/FS Report	04 Nov 93	19 Jul 96	11 Apr 96
Submit Final CMS/FS Report	10 May 94	19 Dec 96	30 Aug 96
Submit Draft Proposed Plan	10 May 94	10 Jan 97	13 Sep 96
Submit Final Proposed Plan	09 Aug 94	25 Mar 97	26 Nov 96
Submit Draft Responsiveness Summary	13 Dec 94	25 Aug 97	06 May 97
Submit Final Responsiveness Summary	16 Mar 95	05 Dec 97	08 Aug 97
Submit Draft Corrective Action Decision/Record of Decision	16 Mar 95	05 Dec 97	08 Aug 97
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	03 Mar 98	04 Nov 97
Submit Corrective Design/Remedial Design Work Plan	15 Jun 95	03 Mar 98	03 Mar 98
Submit Draft Title II Design	15 Feb 96	03 Nov 98	15 Feb 96
Submit Final Title II Design	14 Jun 96	03 Mar 99	3 Mar 99

**July Work Activity Status**

**Remedial Investigation**

The OU 2 Draft Phase II RFI/RI Report was delivered to the regulatory agencies on May 24, 1995, ahead of schedule. The Agencies are reviewing the RI Report.

Trench and Mound Site Characterization - The OU 2 Trenches and Mound Site Characterization is complete. The data are being processed and the report is expected to be completed in August 1995. The detailed trench characterization is required to select the appropriate methods for remediating the sources of contamination in the trenches.

Two hundred and fifty drums of sludge from the OU 2 Surface Water Treatment Unit were shipped to Envirocare.

**Feasibility Study**

Corrective/Remediation Action Objectives TM 1 - On May 17, 1995, responses to the regulatory agency comments for the Draft Final Corrective/Remedial Action Objectives for TM 1 were transmitted to the regulatory agencies.

Screening of Remedial Technologies and Identification of Remedial Alternatives TM 2 - On May 24, 1995, TM 2, *Screening of Remedial Technologies and Identification of Remedial Alternatives*, was delivered to the regulatory agencies.

## Technical Memoranda

### Project

OU 2 - 903 Pad, Mound, and East Trenches

#### TM 1

##### TM Title

Development of Corrective/Remedial Action Objectives  
(Draft submittal in-process)

##### TM Status

When preparation was concluded: 27 Jan 95  
Projected date of Draft submittal to EPA/CDPHE: 01 Feb 95  
Actual date of Draft submittal to EPA/CDPHE: 06 Feb 95  
Date comments were received: 23 Mar 95  
Actual date of Draft Final submitted to EPA/CDPHE: 25 Apr 95  
Date comments were received: To be determined

#### TM 2

##### TM Title

Screening of Remedial Alternatives (Draft submittal)

##### TM Status

When preparation was concluded: 27 Jan 95  
Projected date of Draft submittal to EPA/CDPHE: 01 Mar 95  
Actual date of Draft submittal to EPA/CDPHE: 24 May 95  
Date comments were received from EPA/CDPHE: To be determined

#### TM 4

##### TM Title

OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1  
(Draft Final submittal in process)

##### TM Status

When Draft preparation was concluded: 08 Sep 94  
Actual date of Draft submittal: 24 Oct 94  
Date comments were received: 10 Nov 94  
When Draft Final preparation was concluded: 09 Mar 95  
Projected date of Final submittal to EPA/CDPHE: 26 May 95  
Actual date of Final submittal to EPA/CDPHE: To be determined  
Date comments were received from EPA/CDPHE: None required

#### TM 5

##### TM Title

Exposure Scenarios (Draft Final submittal in process)

##### TM Status

When preparation was concluded: 06 Dec 94  
Projected date of Draft Final submittal to EPA/CDPHE: 31 Oct 94  
Actual date of Draft Final submittal: 07 Dec 94  
Date comments were received from EPA/CDPHE: 02 Feb 95 EPA  
03 Mar 95 CDPHE

#### TM 6

##### TM Title

Modeling

##### TM Status

When preparation was concluded: 15 Jan 93  
Projected date of submittal to EPA/CDPHE: 15 Jan 93  
Actual date of submittal to EPA/CDPHE: 15 Jan 93  
Date comments were received: EPA 01 Apr 93  
CDPHE 31 Mar 93

TM approved

TM 7		
TM Title	Surficial Soils	
TM Status	When preparation was concluded:	07 Jan 93
	Projected date of submittal to EPA/CDPHE:	07 Jan 93
	Actual date of submittal:	12 Jan 93
	Date comments were received:	21 Jan 93
	TM approved	

TM 8		
TM Title	Bedrock	
TM Status	When preparation was concluded:	15 Mar 93
	Projected date of submittal to EPA/CDPHE:	01 Mar 93
	Actual date of submittal:	15 Mar 93
	Date comments were received:	EPA 14 Apr 93 CDPHE 14 Apr 93
	TM approved	

TM 8 Addendum		
TM Title	Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)	
TM Status	When preparation was concluded:	Jun 93
	Projected date of submittal to EPA/CDPHE:	Jun 93
	Actual date of submittal:	Jun 93
	Date comments were received:	FY 93
	TM addendum approved	

TM 9		
TM Title	Chemicals of Concern	
TM Status	When preparation was concluded:	08 Aug 94
	Projected date of submittal to EPA/CDPHE:	03 Oct 94
	Actual date of Draft submittal:	30 Aug 94
	Date comments were received:	05 Oct 94
	TM approved	

TM 10		
TM Title	Toxicity Assessment	
TM Status	When preparation was concluded:	09 Aug 94
	Projected date of submittal to EPA/CDPHE:	30 Aug 94
	Actual date of Draft submittal:	02 Sep 94
	Date comments were received:	05 Oct 94
	TM approved	

Planned Work for August	Work on the trench characterization and source removal IM/IRA operations, the CMS/FS, and on the Treatability Studies will continue.
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Problems	None.
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Open Items	None.
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### **2.2.2 OU 2 REMEDIATION**

Scope of Work	
Changes This Period	None.



**Technical Approach  
Changes This Period**

The OU 2 Accelerated Action (T-3) budget has been completed.  
Work on the Alternative Analysis document was completed.

**IAG Milestone  
Accomplishments**

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary	11 Jan 91
and Final IM/IRA Decision Document	
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report	01 Apr 92
(Phase I Granular Activated Carbon)	
Complete IM/IRA Construction	24 Apr 92
(radionuclides removal system)	
Begin Field Treatability Testing	27 Apr 92
(radionuclides removal system)	
Submit Final Treatability Test Report	02 Jun 92
(Phase I Granular Activated Carbon)	
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93
Submit Draft Pilot Test Plan Site 2	24 Jun 93
Submit Draft Surface Water Field Treatability Report	13 Jul 93
Submit Final Phase II Treatability Study Report	26 Jan 94
Begin Subsurface IM/IRA Test I	14 Feb 94
Submit Subsurface Site 2 Draft Test Plan	06 Jul 94
Submit Draft Pilot Test Report Site 1	10 Nov 94
Submit Final Pilot Test Report Site 1	10 Nov 94
Start-up Soil Vapor Extraction Test Site 2	02 Mar 95*
Submit Draft Pilot Test Report Site 2	02 Mar 95*
Submit Final Pilot Test Report Site 2	02 Mar 95*
Submit Draft Pilot Test Plan Site 3	02 Mar 95*
Submit Final Pilot Test Plan Site 3	02 Mar 95*
Complete Pilot Unit 3 Installation	02 Mar 95*
Submit Draft Pilot Test Report Site 3	02 Mar 95*
Submit Final Pilot Test Report Site 3	02 Mar 95*
Submit Liquid Removal Draft Proposed	03 Mar 95
Action Memorandum	

\* Because work scopes were modified, the Soil Vapor Extraction Test Sites 2 and 3 activities were canceled. New milestone dates to reflect new work scopes are being negotiated.

**Future IAG Milestones  
Through FY96**

Milestone Name	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Liquid Removal Final Proposed Action Memorandum	15 May 95		15 May 95
Submit Acceptance of Alternatives Analysis/Proposed Action Memorandum by Public	31 Jul 95		31 Jul 95
Award Equipment System Design Contract	12 Sep 95		12 Sep 95

Milestone Name	<u>Planned</u> <u>Date</u>	<u>Approved</u> <u>Extension</u> <u>Status</u>	<u>Forecast</u> <u>Date</u>
Finalize Site Designs	24 Oct 95		24 Oct 95
Submit Approval of <i>in situ</i> Vitrification Project Management Plan	14 Nov 95		14 Nov 95
Submit Approval of Site Implementation Plan	14 Nov 95		14 Nov 95

**July Work Activity Status**

Sitewide Treatment Facility activities for the month of July continued as scheduled.

**Surface Water IM/IRA Operations**

Surface Water IM/IRA treatment activities included the following:  
Treated water this month (June): 8,225 gallons  
Total treated to date (06/30/95): 24,846,325 gallons

**Planned Work for August**

Surface Water IM/IRA operations will continue.

The trench characterization results will be compiled.

The Draft RFI/RI Report comments will be incorporated.

**Problems**

None.

**Open Items**

None.

### 2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

#### Scope of Work

##### Changes This Period

Based on an anticipated No Action Record Decision no Feasibility Study will be conducted.

#### Technical Approach

##### Changes This Period

None.

#### IAG Milestone

##### Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

#### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	30 Oct 95	15 Sep 95
Submit Final Phase I RFI/RI Report	13 Dec 93	11 Jul 96	11 Jul 96

#### July Work Activity Status

Wind Tunnel statistical data was presented to the DOE, EPA and CDPHE, and Kaiser Hill on July 21, 1995.

Work continues on the preliminary draft RI Report. This report is expected to be delivered to RMRS on August 4, 1995, for review and comment.

An EE presentation is being prepared for presentation to the Regulatory Agencies. This presentation is expected to take place sometime in August.

An ARARs analysis was conducted and the results are to be presented in a letter report for Agency Review in August.

Preliminary work on the Proposed Remedial Action Plan continues. Submittal of this document is expected in September 1995.

Construction of the W. 88th Avenue Air Monitoring Station was completed on July 28, 1995, and is expected to be fully operational by August 4, 1995. The Meteorological monitoring station should be installed by August 11, 1995.

The Remedy Lands Semi Annual (July 1995) Report submitted to DOE/RFFO on July 31, 1995.

## Technical Memoranda

### Project

### OU 3 - Offsite Areas

#### TM 1 (RFI/RI)

TM Title  
TM Status

Field Changes to RFI/RI the Work Plan

When preparation was concluded: 10 May 93  
Projected date of submittal to EPA/CDPHE: 10 May 93  
Actual date of submittal: 23 Apr 93  
Date comments were received: 05 Jan 94

#### TM 1 (CMS/FS)

TM Title  
TM Status

Preliminary Remediation Goals

When preparation was concluded: In progress  
Projected date of submittal to EPA/CDPHE: 11 Jul 96  
Date comments were received: To be determined

#### TM 2

TM Title  
TM Status

Exposure Scenarios for the Human Health Risk Assessment

When preparation was concluded: 12 May 93  
Projected date of submittal to EPA/CDPHE: 12 May 93  
Actual date of submittal: 03 May 93  
Date comments were received: 15 Jul 93

#### TM 3

TM Title  
TM Status

Modeling

When preparation was concluded: Jan 95  
Projected date of submittal to EPA/CDPHE: 02 Mar 95  
Actual date of submittal: 30 Mar 95  
Date comments were received: 21 Apr 95

#### TM 4

TM Title  
TM Status

Contaminants of Concern

When preparation was concluded: Aug 94  
Projected date of submittal to EPA/CDPHE: 20 Sep 94  
Actual date of submittal: 26 Sep 94  
Date comments were received: 09 Jan 95

#### TM 5

TM Title  
TM Status

Toxicity

When preparation was concluded: Sep 94  
Projected date of submittal to EPA/CDPHE: 10 Nov 94  
Actual date of submittal: 11 Oct 94  
Date comments were received: 24 May 95

TM 6  
TM Title  
TM Status

Ecological Evaluation

When preparation was concluded:

In progress

Projected date of submittal to EPA/CDPHE:

11 Jul 96

Date comments were received:

To be determined

**Planned Work for August**

Respond to CDPHE comments on Technical Memorandum.

Receive the preliminary draft RI Report from Subcontractor.

Transmit the preliminary draft RI to DOE/Kaiser Hill.

Commence DOE / Kaiser Hill / RMRS review of the preliminary draft RI Report.

Revise the preliminary draft RI Report incorporating comments of the DOE / Kaiser Hill / RMRS review.

EE presentation to the Regulatory Agency.

Receive approval for the CDPHE Conservative Screen Letter Report.

Continue work on the Proposed Remedial Action Plan. (Submittal of this document is expected in September 1995.)

Place the 88th Avenue Air Monitoring Station in an operational status in early August.

Install meteorological monitoring station.

Complete ARARs analysis and transmit to Agencies for review.

**Problems**

None.

**Open Items**

State approval of the CDPHE Conservative Screen Letter Report for OU 3.

## **2.4 OU 4 - SOLAR EVAPORATION PONDS**

OU 4 comprises five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

The ponds were relined with various upgraded materials through the early 1960s and 1970s; however, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System (ITS).

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) Disposition of noncertified pondcrete, saltcrete, and pond sludge as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by the regulatory agencies and DOE; (3) the OU 4 assessment and remedial action in accordance with the IAG, which superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the Site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management is a necessary precursor to the OU 4 assessment and remediation, while the pad operations are considered necessary support activities.

Work in the four technical areas was planned to close the ponds and remediate OU 4. The scope of the work was to (1) remove water and sludge from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related groundwater, (3) store pond wastes in compliance of all regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as required, and (7) remediate groundwater as required.

The RCRA/CERCLA investigation Phase I field work began in FY 93 and will continue through construction of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation Area with other areas funded to provide necessary precursor and support activities to allow the IAG scope to be completed.

In July, 1993 the IM/IRA to treat ITS water was completed and the system continues operation today. The ITS water is treated in the Building 374 treatment facility. Process water has not been pumped into the ponds since 1986, and with the diversion of the ITS water to storage tanks in April 1993, groundwater is no longer returned to the ponds. Pond sludge removal operations in four of the five solar evaporation ponds was completed by August 1994. Operations to remove the sludge in Pond 207C was completed in January 1995.

In April 1995, an IM/IRA/Environmental Assessment Decision Document that proposed the Phase I pond closure and remedy completed public comment. The proposal recommended the use of newly promulgated RCRA regulations designed to improve corrective actions. Contaminated soil, pond sludge, pondcrete, and debris will be permanently placed into the pond closure and isolated to protect human health and the environment. The DOE, CDPHE, and EPA are evaluating the proposal. DOE has requested an extension of all OU 4 IAG milestones to allow time for the agencies' evaluation and in response to FY95 funding recisions.

### **2.4.1 OU 4 ASSESSMENT**

#### **Scope of Work Changes This Period**

Scope reductions due to reevaluation of path forward in lieu of changed conditions and budgetary restraints. Future path under reevaluation by DOE, CDPHE, and EPA.

**Technical Approach  
Changes This Period**

The current baseline will not be met due to reevaluation of path forward and budgetary restraints.

**IAG Milestone  
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90
Submit Draft Phase II RFI/RI Work Plan	27 May 94
Submit Final Phase II RFI/RI Work Plan	02 Sep 94

**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Report	16 Apr 96		16 Apr 96 *
Submit Final Phase II RFI/RI Report	11 Sep 96		11 Sep 96 *

\* Milestone will be missed due to reevaluation of path forward and funding restraints, forecast date is not known.

**July Work Activity Status**

Significant effort was expended in several iterations of stopping and restarting subcontracted work to respond to variations in authorized funding. At the end of the month, contract status was as follows: ITS Evaluation (resumed); Preparation of Final Field Program Report (resumed); Drilling of Ground Water Monitoring Wells (suspended); Preparation of Phase II RFI/RI Report (suspended).

**Technical Memoranda**

Project

OU 4 - Solar Evaporation Ponds

TM 1

TM Title

TM Status

Vadose Zone Investigation

Draft submitted to EPA/CDPHE:

Comments received:

Conditional approval:

Projected submittal of Final TM to EPA/CDPHE:

Actual submittal date of Final TM:

Submittal of TM 1 Vadose Zone Schedule:

EPA/CDPHE final approval of TM 1:

16 Nov 92

30 Nov 92

30 Nov 92

15 Dec 92

15 Dec 92

19 May 93

17 Jun 93

TM 2

TM Title

TM Status

Modification to Field Activities

Draft submitted to EPA/CDPHE:

Comments received:

Projected submittal of Final TM to EPA/CDPHE:

Actual submittal date of Final TM:

EPA/CDPHE final approval of TM 2:

18 Mar 93

07 May 93

07 Jun 93

09 Jun 93

30 Jun 93

TM 3	Environmental Evaluation	
TM Title	Draft submitted to EPA/CDPHE: 19 Mar 93	
TM Status	Comments received:	EPA 21 Apr 93 CDPHE 02 Jun 93
	Projected submittal of Final TM to EPA/CDPHE:	30 Apr 93
	Actual submittal date of Final TM:	02 Jul 93
	EPA/CDPHE final approval of TM 3:	30 Jul 93

TM 4	Human Health Risk Assessment Exposure Scenarios	
TM Title	Draft submitted to EPA/CDPHE: 19 Mar 93	
TM Status	Comments received:	EPA 21 Apr 93 CDPHE 23 Apr 93
	Projected submittal of Final TM to EPA/CDPHE:	11 Jun 93
	Actual submittal date of Final TM:	11 Jun 93
	EPA/CDPHE final approval of TM 4:	25 Jun 93

**Planned Work for August**      Complete ITS evaluation.

Develop Final Field Program report.

**Problems**      All future milestones will be missed due to the re-evaluation of the path forward for closure of the operable unit. New milestones will be established as part of the output of the re-evaluation effort.

**Open Items**      None.

#### **2.4.2 OU 4 REMEDIATION**

**Scope of Work**

**Changes This Period**      Scope reductions due to reevaluation of path forward in lieu of changed conditions and budgetary restraints. Future path under reevaluation by DOE, CDPHE, and EPA.

**Technical Approach**

**Changes This Period**      The current baseline will not be met due to reevaluation of path forward and budgetary restraints.

<b>IAG Milestone Accomplishments</b>	Draft Phase I Proposed IM/IRA Decision Document	27 May 94
	All Solar Ponds Emptied of Water and Sludge	15 Jan 95
	Final Phase I Proposed IM/IRA Decision Document	01 Feb 95

#### **Future IAG Milestones Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit IM/IRA Responsiveness Summary	25 Jan 95	09 Jun 95	Complete
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	9 Aug 95*	
Submit IM Title II Design Work Plan	24 Jun 96	18 Dec 95*	



<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Start of Soil Excavation Relative to IHSS 101 Closure	28 Jan 97	28 Oct 96*	

\* Milestone will be missed due to reevaluation of path forward and funding restraints, forecast date is not known.

#### **July Work Activity Status**

#### **Waste Treatment**

The "Inventory Pondcrete (processing) Conceptual Design" contract and the OU 4 "Consolidated Waste Study" contract were terminated for convenience by EG&G on June 30, 1995 and are now undergoing contract closeout by EG&G.

Scope resolution has identified that a part of the new Onsite Waste Management Facility (OWMF) will be designated a CAMU to receive remediation waste from OU 4, and that the rest of the OWMF will become a RCRA Subtitle C facility to receive wastes treated to LDR and UTS.

Scope has been defined to treat pond sludges to OWMF CAMU WAC, and pondcrete to OWMF LDR/UTS WAC. Efforts have begun to complete the Inventory Pondcrete Conceptual Design task via a new contract with the same vendor; however, budget restrictions have delayed implementation.

Feasibility is being assessed to engage a fixed-price subcontractor to design, build, operate, and remove a facility to process OU 4 pond sludge and pondcrete to the OWMF WAC and schedule. Efforts were begun to identify paths forward and barriers to this approach.

#### **Waste Storage and Disposal**

Repack and restack of metal containers on 904 Pad has been completed. Efforts continue toward Part B Permit requirements; i.e., metal containers have been relocated to allow access to the berms.

Installation of the last of the 10,000 plastic tanks on the 750 Pad was completed. All auxillary connections were made to the tanks. The tanks are ready for inspection and certification expected to occur early in August.

Transfer of sludge removed from Pond 207C continues from metal containers to the plastic tanks. As of the end of this month, only 48 crates remain.

#### **Interim Remedial Action**

**Water Management** - The modular tanks have no remaining usable volume. June 1995 was a very wet month and over a million gallons of water flowed into the modular tanks. During high flows in May, water was placed in the third tank, which is normally kept empty for emergency response. Capacity limitations at Building 374 have limited the amount of water processed from the tanks. As a result, the month ended with significant volumes of water in all three tanks.

**Interim Measure Remediation  
IM/IRA Decision Document**

Budgetary constraints and potential technical scope changes during the month have essentially stopped work in some areas, while only minimal support remains in others. These events have necessitated an extension request for all IAG Table 6 milestones after the Phase I IM/IRA Draft Responsiveness Summary. The Dispute Resolution Committee has accepted a new "path forward" developed by the Joint Working Group.

**Preconstruction - No activity**

**Interim Measure Sludge -**

Activities to remove sludge from the clarifier to sludge holding tanks have been deferred due to budget reductions. The transfer of 207C Pond material from the metal crates is suspended until budget allocations are finalized.

**Planned Work for August**

The transfer of sludge in metal containers to sludge holding tanks will continue upon completion of the stand-alone vacuum transfer system and if funding becomes available.

Shutdown of most other project elements will be completed.

**Problems**

All future milestones will be missed due to the re-evaluation of the path forward for closure of the operable unit. New milestones will be established as part of the output of the re-evaluation effort.

Uncertainty regarding available funding continues to impact the progress of the work.

**Open Items**

Ownership of sufficient areas for processing is still unsolved. Technically, Tent 12 and the adjacent pad area for sludge processing and Tent 11 for pondcrete processing are considered the most efficient from a treatment viewpoint. Wastes presently stored there must be moved or a new option explored.

## 2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, comprises the assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, storm water runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

### Scope of Work

#### Changes This Period

None.

### Technical Approach

#### Changes This Period

None.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan

05 Apr 91

Submit Final Phase I RFI/RI Work Plan

30 Aug 91

### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved</u>	<u>Forecast Date</u>
		<u>Extension Status</u>	
Submit Draft Phase I RFI/RI Report	30 Nov 93	01 Nov 95	01 Nov 95
Submit Final Phase I RFI/RI Report	03 May 94	02 Apr 96	02 Apr 96

### July Work Activity Status

The in-depth ecological risk assessment for the Woman Creek watershed continues and is planned for completion in late September. Regulatory agencies' final approval of the Draft Final ERAM Site Conceptual Model and the Draft Final Ecological Chemical of Concern Methodology was received.

Preparation of the draft OU 5 RFI/RI Report continues and will undergo an internal technical review and quality assurance review starting in August 1995. The Environmental Evaluation, Chapter 7.0, will not be included in this review, but will be completed in time for inclusion into the Draft RFI/RI Report submittal to the EPA and the CDPHE, by the November 1, 1995, IAG Milestone. The following chapters are essentially complete:

Chapter 1.0	Introduction
Chapter 2.0	Field Operations and Investigations
Chapter 3.0	Physical characteristics
Chapter 5.0	Contaminant Fate and Transport
Chapter 6.0	Human Health Risk Assessment
Chapter 9.0	Data Gaps

The geotechnical analysis of the slope stability of the Original landfill is no longer on hold due to funding issues. The final analysis will be used to determine the final remedy of the Original Landfill.

OU 5 is waiting for approval from the regulatory agencies on TM #11, Chemicals of Concern, TM #12, *Exposure Assessment*, and the Toxicity Factors letter that replaced TM#14. Work is continuing without final approval.

## Technical Memoranda

### Project

### OU 5 - Woman Creek Priority Drainage Remedial Investigation

#### TM 1

TM Title

TM Status

Surface Water and Sediments

When preparation was concluded:

30 Nov 92

Projected date of submittal to EPA/CDPHE:

30 Nov 92

Actual date of submittal:

13 Oct 92

#### TM 2

TM Title Surface Geophysics

TM Status

When preparation was concluded:

30 Nov 92

Actual date of submittal:

13 Oct 92

#### TM 3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation was concluded:

07 May 93

Actual date of submittal:

26 Jan 93

#### TM 4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation was concluded:

07 Jun 93

Actual date of submittal

12 Apr 93

#### TM 5

TM Title

TM Status

Soil Gas Sampling at IHSS 115

When preparation was concluded:

07 May 93

Actual date of submittal:

25 Mar 93

#### TM 6

TM Title

TM Status

Cone Penetrometer at IHSS 115

When preparation was concluded:

14 Apr 93

Actual date of submittal:

25 Mar 93

#### TM 7

TM Title

TM Status

Soil Borings at IHSS 133

When preparation was concluded:

07 May 93

Actual date of submittal:

19 Feb 93

#### TM 8

TM Title

TM Status

Monitoring Wells at IHSS 115

TM 8 has been canceled and has been replaced by a letter outlining the justification for the location of the wells in IHSS 115.

TM 9			
TM Title	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete Wash Pad		
TM Status	Actual date of the Draft TM submittal to EPA/CDPHE:	06 May 93	
	Actual date of the Final TM submittal to EPA/CDPHE:	28 Jun 93	
TM 10			
TM Title	Soil Borings at IHSS 209		
TM Status	When preparation was concluded:	06 Mar 93	
	Actual date of the Final TM submittal to EPA/CDPHE:	06 Mar 93	
TM 11			
TM Title	Contaminants of Concern		
TM Status	Actual date of the Final TM submitted to EPA/CDPHE:	20 Mar 95	
	EPA approval pending		
TM 12			
TM Title	Exposure Scenarios		
TM Status	Actual date of the Final submittal to EPA/CDPHE:	12 May 95	
	EPA approval pending		
TM 13			
TM Title	Modeling		
TM Status	Actual date of submittal of the Final to EPA/CDPHE:	29 Nov 94	
TM 14			
TM Title	Toxicity Assessment		
TM Status	Actual date of submittal of the Final to EPA/CDPHE:	14 Nov 94	
	EPA approval pending		
TM 15			
TM Title	Addendum to the Field Sampling Plan		
TM Status	Actual date of the Final TM submittal to EPA/CDPHE:	31 Aug 94	
<b>Planned Work for August</b>	The Geotechnical Analyses of the slope stability of the original landfill and internal technical and quality assurance reviews will continue.		
<b>Problems</b>	None.		
<b>Open Items</b>	Approval of Technical Memorandum 14, <i>Toxicity Assessment</i> , is pending.		
	Approval of Technical Memorandum 11, <i>Chemicals of Concern</i> , is pending.		

## 2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B, and C (IHSSs 166.1, 166.2, and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

### Scope of Work

**Changes This Period** None.

### Technical Approach

**Changes This Period** None.

### IAG Milestone

<b>Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	02 Oct 95	19 Apr 95
Submit Final Phase I RFI/RI Report	07 Jan 94	21 Feb 96	20 Nov 95

### July Work Activity Status

OU 6 is waiting for approval from the regulatory agencies on TM #2, *Exposure Assessment*, and TM #3, *Model Descriptions*. Work is continuing on the Human Health Risk Assessment without final approval on these documents.

OU 6 received regulatory agency final approval on the Draft Final ERAM Site Conceptual Model and the Draft Final Ecological Chemical of Concern Methodology.

OU 6 completed the Human Health Risk Assessment and the summary section for the RFI/RI Report.

Final editing continued on Chapters 1-3, 5, 6 and 8. Chapter 4 is in the process of revision and Chapter 7 has yet to be written.

The in-depth ecological risk assessment continued for the month of July and is planned for completion in late September.

## Technical Memoranda

### Project

OU 6 - Walnut Creek

#### TM 1

TM Title

Work Plan Modifications

TM Status

Approved by EPA:

08 Jan 93

#### TM 2

TM Title

Exposure Assessment

TM Status

When preparation of the Draft TM was concluded:

07 Jul 93

Date the Draft TM was submitted to EPA/CDPHE:

07 Jul 93

Actual date of submittal of the Final TM to EPA/CDPHE:

14 Feb 95

#### TM 3

TM Title

Modeling Description

TM Status

When preparation of Draft was concluded:

10 Nov 93

Date the Draft TM was submitted to EPA/CDPHE:

10 Nov 93

Date EPA/CDPHE comments were received:

23 Dec 93

Date the Final TM was submitted to EPA/CDPHE:

14 Jan 94

Actual date of submittal of the Second Final TM  
to EPA/CDPHE:

30 Jan 95

#### TM 4

TM Title

Contaminants of Concern

TM Status

Date the Draft TM was submitted to EPA/CDPHE:

23 Aug 94

Date EPA/CDPHE comments were received:

03 Oct 94

Approved on:

28 Dec 94

#### TM 5

TM Title

Toxicity Factors

TM Status

Date the Draft Final TM was submitted to EPA/CDPHE:

23 Aug 94

Deleted from submittal by a letter dated:

28 Dec 94

### **Planned Work for August**

Chapters 1-4 of the Draft RFI/RI Report will be completed for delivery to the regulatory agencies

Chapter 5, Fate and Transport, and the associated appendices, will be available for DOE, EPA, and CDPHE review in early August. The Human Health Risk Assessment and Chapter 6 will be available for agency review in mid-August.

Work will continue on the ecological risk assessment and the corresponding text for the RFI/RI Report.

### **Problems**

None.

### **Open Items**

Approvals of TM #3, *Modeling Description*, and TM #2, *Exposure Assessment*, are pending from the regulatory agencies.

## 2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area, which is a section of the Present Landfill located in the southwest corner, used between 1986 and 1987 as a temporary storage area for hazardous waste. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

### Scope of Work

Changes This Period ..... None.

### Technical Approach

Changes This Period ..... None.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	Deleted *
Submit Draft Phase II RFI/RI Work Plan	Deleted *
Submit Final Phase I RFI/RI Report	Deleted *
Submit Final Phase II RFI/RI Work Plan	Deleted *
Submit Preliminary Draft Proposed Action Memorandum (leachate) to CDPHE/EPA <sup>1</sup>	13 Oct 94
Submit Draft Revised Phase I Work Plan Technical Memorandum <sup>2</sup>	23 May 94
Submit Final Phase I Work Plan Technical Memorandum <sup>2</sup>	08 Sep 94
Submit Final Draft Proposed Action Memorandum (leachate) for Public Comment <sup>3</sup>	13 Oct 94
Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA <sup>4</sup>	30 Nov 94

\* CDPHE deleted per Oct 21, 1994, letter.

1 CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Preliminary Draft IM/IRA to CDPHE/EPA"

2 New milestones per CDPHE October 21, 1994, letter.

3 CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Draft IM/IRA for Public Comment"

4 CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Responsiveness Summary IM/IRA to CDPHE/EPA"



**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<b>Landfill Closure IM/IRA</b>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	31 Aug 95	31 Aug 95
Submit Draft Final Phase I Proposed IM/IRA Decision Document	06 Apr 95	05 Jan 96	05 Jan 96
Submit IM/IRA Responsiveness Summary	14 Aug 96	01 Apr 96	01 Apr 96
Submit Final Phase I Proposed IM/IRA Decision Document	09 Nov 95	18 Jun 96	18 Jun 96
<b>Landfill Leachate Collection Proposed Action Memorandum</b>			
Release Final Responsiveness Summary and Proposed Action Memorandum	22 Mar 95		22 Mar 95
Submit Modified Proposed Action Memorandum	15 Jun 95		15 Jun 95
Seep Collection System Operational	16 Aug 95	27 Dec 95	27 Dec 95

**July Work Activity Status**

The air quality review of the Passive Seep Collection And Treatment System construction activity was completed. The evaluation concluded that the activity is not subject to air emission inventory or air permitting requirements.

The Landfill IM/IRA Decision Document was transmitted to Kaiser-Hill on July 27, 1995 and then transmitted to DOE on August 2, 1995.

**Technical Memoranda**

Project

OU 7 - Present Landfill

TM

TM Title

TM Status

Revised Work Plan

Submitted the Draft TM to EPA/CDPHE for review: 23 May 94

Comments received: 01 July 94

Submitted the Final TM transmitted to EPA/CDPHE: 09 Sep 94

Approved by the regulatory agencies: 30 Sep 94

**Planned Work for August**

The IM/IRA Decision Document will be submitted to the regulatory agencies

Design review of the Passive Leachate Collection And Treatment System will be performed.

Wetland assessment for the Passive Leachate Collection And Treatment System will be completed.

**Problems**

None.

**Open Items**

None.

## **2.IA INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14)**

The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of a close proximity to each other and similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

### **Scope of Work**

#### **Changes This Period**

None.

### **Technical Approach**

#### **Changes This Period**

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in the IA OUs. The technical scope for the IA OUs remains the same.

### **IAG Milestone**

#### **Accomplishments**

Submitted Proposed Plan for Reconfiguration  
of the IA OUs

04 Nov 94

### **Future IAG Milestones**

#### **Through FY 95**

This information is listed in the IA OUs.

### **July Work Activity Status**

DOE issued a formal Stop Work Order on March 7, 1995. An Implementation Plan is being developed and was delivered to DOE in May 1995. The plan outlines a course of action to bring the Industrial Area Operable Units activities to a logical closure point. All activities relating to the completion of the IAG milestones have been included in the Stop Work Order. Field activities and "time dependent" (seasonal) sampling activities have been exempt from the Stop Work Order; however, the technical memoranda to summarize the activities are not exempted.

The Proposed Plan for Reconfiguration of the IA OUs was submitted to the regulatory agencies November 4, 1994. To date, no written comments have been received on the Proposed Plan.

Due to recent budget recisions the funding for the third sampling event under the Surface Water and Sediment Field Sampling Plan may not be performed.

### **IA OUs Quality Assurance**

No significant activity due to the Stop Work Order.

### **IA IM/IRA Plan**

No significant activity to report.

## Technical Memoranda

### Project

### Integrated Industrial Area Operable Units

TM 1

TM Title

TM Status

IA Surface Water and Sediment Sampling Plan

Projected date of submittal to EPA/CDPHE:

12 Jan 95

Actual date of submittal:

05 Jan 95

Date CDPHE comments were received:

15 Jan 95

Date CDPHE approval was received:

05 Mar 95

### **Planned Work for August**

Due to the Stop Work Order issued in March 1995, activities for the IA OUs will be brought to a logical closure point as per the Implementation Plan, submitted in May 1995.

### **Problems**

The Stop Work Order issued in March 1995, will delay intrusive field activities planned for fourth quarter FY95 and all subsequent activities.

### **Open Items**

Comments on the Proposed Plan for Reconfiguration of the IA OUs.

New agreement with the regulatory agencies needs to be negotiated to establish new milestone dates for the Industrial Area Operable Units.

## 2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affect areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

None.

### Technical Approach

#### Changes This Period

The Stop Work Order (SWO) issued in March 1995 effectively stops the technical activities and any new field work activities in OU 8. The technical scope for OU 8 remains the same.

Accelerated removal of the sodium hydroxide tank and two steam condensate tanks which are located within IHSS 139.1 (N) was halted due to the May 1995 budget recision. These removals were being performed as part of the D&D Pilot Project 4. Funding to this project was eliminated as part of the budget recision.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan

01 May 92

Submit Final Phase I RFI/RI Work Plan

01 Dec 92

#### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	12 Jul 94	Stop Work Order	To be determined*

\* To be determined pending Industrial Area reconfiguration.

### July Work Activity Status

On June 1, 1995 informal verbal comments on the redlined pages of TM 1 were received from CDPHE. There were only two comments and they were minor in nature. These were communicated verbally to the subcontractor on June 2, 1995. A letter from CDPHE was received encouraging DOE to finalize TM 1. Upon approval from DOE, a final document will be developed.

Data analysis and preparation of the Stage 2 Nonintrusive Field Investigation Data Summary Report is ongoing. This effort is focusing on documenting the field activities and the results of the NaI surveys, High Purity Germanium surveys, and soil gas analyses.

Results of laboratory analyses will be incorporated as they become available. Approximately 80 percent of the results from the laboratory analyses has been received. The most significantly delayed analyses have been the lab HPGe analyses of the vertical soil profile samples. All of these samples have been run once, but several samples need to be re-run. This work is being delayed by the need for the lab to acquire new standards before reanalyzing the samples. Latest estimates indicate that the necessary calibration standard will not be available until mid to late July 1995. Sections of the Summary Report are being compiled as the data become available. In accordance with the Stop Work Order (SOW), data evaluation and development of recommendations are not being performed.

#### **IA IM/IRA Plan**

The needs analysis and programming scenario development were completed for the Decision Support System (DSS). Scenario development has occurred for all media.

#### **Technical Memoranda**

##### **Project**

##### **OU 8 - 700 Area**

##### **TM 1**

##### **TM Title**

Investigation of Foundation Drains and Other Data Compilation  
Addendum to the OU 8 Work Plan, Draft Final

##### **TM Status**

Projected date of submittal to EPA/CDPHE: 01 Dec 94  
Actual date of submittal: 23 Nov 94  
Date when EPA/CDPHE comments received: To be determined

##### **TM 2**

##### **TM Title**

Results of Nonintrusive Field Investigations and Intrusive Work Plans  
(Actual Title has not been finalized)

##### **TM Status**

Projected date of submittal to EPA/CDPHE: To be determined  
Actual date of submittal: To be determined  
Date when EPA/CDPHE comments received: To be determined

#### **Planned Work for August**

Once the SWO is lifted, complete TM 1.

Complete preparation of a Data Summary Report.

Once the SWO is lifted, resume work on TM 2.

#### **Problems**

If the IA SWO is not resolved, there is a potential to significantly disrupt the flow of work and the progress of the project. If field crews are lost to other projects while the SWO is in effect, much greater than day-for-day schedule and cost impacts are possible.

#### **Open Items**

None.

## 2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred near pipe joints and valves, at approximately 100- to 200-foot intervals along the pipelines and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of the work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

None.

### Technical Approach

#### Changes This Period

The Stop Work Order (SWO) issued in March 1995 effectively stops the technical activities and any new field work activities in OU 9. The technical scope for OU 9 remains the same.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 91

### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	06 Sep 94	Stop Work Order	To be determined*
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	Stop Work Order	To be determined*
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	Stop Work Order	To be determined*
Submit Final Phase II RFI/RI Work Plan	07 Aug 95	Stop Work Order	To be determined*
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	Stop Work Order	To be determined*

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit IM/IRA Responsiveness Summary	08 Feb 96	Stop Work Order	To be determined*
Submit Final Phase I IM/IRA Decision Document and Responsiveness Summary	07 May 96	Stop Work Order	To be determined*
Submit Corrective Design/Remedial Design Work Plan	07 Jun 96	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

#### **July Work Activity Status**

Under the terms of the SWO issued in March 1995, work on sampling and analysis continues, but data evaluation and development of recommendations are not being performed.

All field work has been completed for the tank investigation except for the HPGe Survey and remaining sodium iodide survey which have been stopped until the SWO is lifted.

Comments from the regulatory agencies on the addendum to OU 9 TM 1, *Volume I, Part A, Field Sampling Plan- Outside Tanks*, to address Tanks T-8, T-9, T-11, T-24, T-30, and T-32 have not been received. However, the addendum has been finalized, and field work has been completed on these tanks.

#### **Technical Memoranda**

##### Project

##### OU 9 - Original Process Waste Lines

##### TM 1

##### TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

##### TM Status

When preparation was concluded: Jan 94  
Projected date of submittal to EPA/CDPHE: Mar 94  
Actual date of submittal: 15 Mar 94  
Date EPA/CDPHE comments received: 11 Apr 94

##### TM 1

##### TM Title

Field Sampling Plan - Volume II, Part A, Outside Pipelines

##### TM Status

When preparation was concluded: Aug 94  
Projected date of submittal to EPA/CDPHE: Nov 94  
Actual date of submittal: Nov 94  
Date EPA/CDPHE comments received: To be determined

#### **Planned Work for August**

Work will continue on completing soil boring logs, records transmittal, and field demobilization. Work will continue on data summary reports as the analytical results come in.

All analytical data should be uploaded into Rocky Flats Environmental Database System (RFEDS) by August 14, 1995.

**Problems**

The tolling agreement which addressed missed IAG milestones expired January 31, 1995. The Rocky Flats Clean Up Agreement has not been signed so these original milestones could be enforced once the SWO is lifted and additional fines and penalties could be incurred.

**Open Items**

Comments are due from the regulatory agencies on the Draft TM 1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*. However, based on verbal comments from the regulatory agencies, rescoping of the document is needed. Rescoping will be resumed after the SWO has been lifted.



## **2.10 OU 10 - OTHER OUTSIDE CLOSURES**

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### **Scope of Work**

#### **Changes This Period**

None.

### **Technical Approach**

#### **Changes This Period**

The Stop Work Order (SWO) issued in March 1995 effectively stops the technical activities and any new field work activities in OU 10. The technical scope for OU 10 remains the same.

### **IAG Milestone**

#### **Accomplishments**

Submit Draft Phase I RFI/RI Work Plan

27 Nov 91

Submit Final Phase I RFI/RI Work Plan

01 May 92

### **Future IAG Milestones**

#### **Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	30 Jan 95	Stop Work Order	To be determined*
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Stop Work Order	To be determined*
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	Stop Work Order	To be determined*
Submit Final Phase II RFI/RI Work Plan	21 Nov 95	Stop Work Order	To be determined*
Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	Stop Work Order	To be determined*
Submit IM/IRA Responsiveness Summary	06 Mar 96	Stop Work Order	To be determined*
Submit Final Phase I IM/IRA Decision Document	04 Jun 96	Stop Work Order	To be determined*
Corrective Design/Remedial Design Work Plan	05 Jul 96	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

## July Work Activity Status

Under the terms of the SWO issued in March 1995, work continues on sampling and analysis, but data evaluation and development of recommendations are not being performed. The SWO will be in effect until the DOE can negotiate the Rocky Flats Cleanup Agreement, which will contain new milestones for the IA OUs. Integral to the negotiation of this agreement is the approval of the IA OU Reconfiguration Plan, which was submitted to the regulatory agencies in November 1994.

The Draft TM 1 comments were scheduled to be received from the regulatory agencies in February 1995 but have not been received to date. The schedule for the delivery of the OU 10 Final Phase I Nonintrusive TM 1 is in jeopardy of being significantly delayed from the preliminary schedule developed in June 1994. Further delays in receipt of comments will result in a day-for-day slippage of the Final document delivery schedule.

The OU 10 443 underground tank removal action has been delayed due to lack of funding to complete the predecisional sampling and analysis plan (SAP), which will provide the necessary data to make a final determination of the viability of this project. If levels of RCRA listed wastes are too great in the subsurface to manage effectively under the current funding climate, the project will be scrapped. Unless additional funding can be secured, the SAP will not be completed in FY95. This IHSS (129) has been selected as part of the Kaiser-Hill "top ten" clean-up areas at the Site.

## Technical Memoranda

### Project

### OU 10 - Other Outside Closures

TM 1

TM Title

TM Status

Draft Final Phase I Nonintrusive TM 1

When preparation was concluded:

17 Jan 95

Projected date of submittal to EPA/CDPHE:

17 Jan 95

Actual date of submittal:

17 Jan 95

Date comments were received from  
the EPA/CDPHE:

To be determined

TM 1

TM Title

TM Status

Final Phase I Nonintrusive TM 1

When preparation was concluded:

To be determined

Projected date of submittal to EPA/CDPHE:

06 Apr 95

Actual date of submittal:

To be determined

Date comments were received from  
the EPA/CDPHE:

To be determined

## Planned Work for August

Unless the SWO is lifted, no new work is planned for July.

**Problems**

If the IA SWO is not resolved, it has the potential to significantly disrupt the flow of work and the progress of the project. If field crews are lost to other projects while the SWO is in effect, much greater than day-for-day schedule and cost impacts are possible.

Comments from the DOE and the regulatory agencies for Draft TM 1 have not been received.

**Open Items**

The Draft TM 1 comments were scheduled to be received from the regulatory agencies in February 1995 but have not been received to date.

## **2.11 OU 11 - WEST SPRAY FIELD**

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

### **Scope of Work**

**Changes This Period**                      None.

### **Technical Approach**

**Changes this Period**                      None.

### **IAG Milestone**

<b>Accomplishments</b>	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
	Submit Final Phase I RFI/RI Work Plan	02 Jan 92
	Submit Draft Phases (combined) RFI/RI Report	28 Apr 95
	Submit Draft Proposed Plan	10 May 95
	Submit Draft Phase II RFI/RI Work Plan	Deleted *
	Submit Final Combined Phases RFI/RI Report	08 Jun 95
	Submit Final Proposed Plan	20 Jun 95

\* CDPHE deleted per October 13, 1993 letter integrating the two phases.

### **Future IAG Milestones Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95		Deleted *
Submit Final Phase II RFI/RI Work Plan	24 Jan 96	24 Jan 96	Deleted *
Submit Final Phase I Proposed IM/IRA Decision Document	14 Mar 96	14 Mar 96	Deleted *
Submit Phase I IM/IRA Responsiveness Summary	22 Jul 96	22 Jul 96	Deleted *
Submit Draft Responsiveness Summary	07 Sep 95		07 Sep 95
Submit Draft CAD/ROD	07 Sep 95		07 Sep 95
Submit Final Responsiveness Summary	29 Sep 95		29 Sep 95
Submit Final CAD/ROD	29 Sep 95		29 Sep 95

\* CDPHE deleted per July 13, 1995 letter.

### **July Work Activity Status**

The Public Hearing for the Proposed Plan was held on July 19, 1995.

The Preliminary Draft CAD/ROD was completed and is being reviewed internally.

## Technical Memoranda

### Project

OU 11 - West Spray Field

TM

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives  
Submitted to EPA/CDPHE:  
TM approved

31 Mar 94

TM 1

TM Title

TM Status

Exposure Scenarios  
Canceled

TM 2

TM Title

TM Status

Modeling  
Canceled

TM 3

TM Title

TM Status

Contaminants of Concern  
Canceled

TM 4

TM Title

TM Status

Toxicity  
Canceled

### **Planned Work for August**

Prepare responses to public comments on the Proposed Plan.  
Public comment period ends August 26, 1995.

Finalize Draft CAD/ROD.

### **Problems**

None.

### **Open Items**

None.

## 2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area may be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of the development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

None.

### Technical Approach

#### Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 12. The technical scope for OU 12 remains the same.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan

08 May 92

Submit Final Phase I RFI/RI Work Plan

05 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved</u>		<u>Forecast Date</u>
		<u>Extension</u>	<u>Status</u>	
Submit Draft Phase I RFI/RI Report	20 Apr 94	Stop Work Order		To be determined*
Submit Final Phase I RFI/RI Report	15 Sep 94	Stop Work Order		To be determined*

\* To be determined pending IA reconfiguration.

### July Work Activity Status

DOE issued a Stop Work Order in March 1995. The Stop Work Order is and will continue delaying current schedules. Many events and milestones will remain unrecoverable.

Technical Memorandum 2, *Summary of Non-intrusive Field Investigations*, is being brought "in-house" for completion to draft from preliminary draft. However, due to budget shortfalls this activity cannot be completed until an additional funding source can be identified.

## **Technical Memoranda**

### **Project**

OU 12 - 400/800 Area

### **TM 2**

### **TM Title**

Summary of Nonintrusive Field Investigations

### **TM Status**

Projected date of submittal to EPA/CDPHE:

Delayed

Delay due to the Stop Work Order.

New deliverable date to be determined.

Actual date of submittal:

To be determined

Date EPA/CDPHE comments were received:

To be determined

### **Planned Work for August**

If the Stop Work Order is lifted, DOE and the Rocky Flats Environmental Technology Site review of the OU 12 Preliminary Draft Nonintrusive Summary TM may continue.

Due to the Stop Work Order issued in March 1995, activities for the IA OUs will be brought to a logical closure point as per the Implementation Plan submitted in May 1995.

### **Problems**

Stop Work Order issued in March 1995 will delay characterization activities, other events, and milestones.

### **Open Items**

New agreement with regulatory agencies needs to be negotiated to establish new milestone dates for the Industrial Area Operable Units.

## 2.13 OU 13 - 100 AREA

Cleanup of the 100 Area comprises the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2, and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

This OU is under a Stop Work Order. No further characterization will be pursued at this time; however, preparation of a Data Summary Report for Nonintrusive Field Investigations will proceed.

### Technical Approach

#### Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 13. The technical scope for OU 13 remains the same.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/RI Work Plan	12 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	11 Jan 95	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

### July Work Activity Status

Work has begun on compiling the data for Technical Memorandum #2, *Results of the Nonintrusive Field Investigations*. The first draft has been completed and reviewed. A comment meeting was held May 25, 1995. The Final Draft is scheduled for completion June 16, 1995 and review, with the final delivery on July 3, 1995.



## Technical Memoranda

### Project

OU 13 - 100 Area

#### TM 1

TM Title

Addendum to Field Sampling Plan

TM Status

When preparation was concluded:

Feb 94

Projected date of submittal to EPA/CDPHE:

Feb 94

Actual date of submittal:

03 Mar 94

Date EPA/CDPHE comments were received:

16 May 94

#### TM 2

TM Title

Results of the Nonintrusive Field Investigations

TM Status

Projected date of submittal to EPA/CDPHE:

07 Feb 96

Actual date of submittal:

To be determined

Date EPA/CDPHE comments were received:

To be determined

### **Planned Work for August**

All activities permitted under the Industrial Area Operable Units Stop Work Order Implementation Plan have been completed for Operable Unit 13 and no further activities will occur until the Stop Work Order is lifted and appropriate funding sources have been identified.

### **Problems**

None.

### **Open Items**

New agreement with regulatory agencies needs to be negotiated to establish new milestone dates for the Industrial Area Operable Units.

## 2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area, loading dock north of Building 776 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSS 156.1); Building 444 Parking Lot (IHSS 160); southwest of Building 664 (IHSS 161); Radioactive Site along 8th Avenue (IHSS 162); Radioactive Sites - 800 Area that includes the concrete slab north of Building 850, and Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed is preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by the EPA and the CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil-gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

**Changes This Period** None.

### Technical Approach

**Changes This Period**

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 14. The technical scope for OU 14 remains the same.

### IAG Milestone

**Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
Submit Final Phase I RFI/RI Work Plan	19 Oct 92

**Future IAG Milestones Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	23 May 95	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

### July Work Activity Status

Final approval was received and the controlled procedure was issued for the Pushed Subsurface Soil Sampler.

The OU 14 Data Summary Report (DSR) for the completed Stage I Field Investigation was completed the week of June 19, 1995.

### Technical Memoranda

**Project**

**OU 14 - Radioactive Sites**

**TM 1**

**TM Title**

**TM Status**

**Results of Nonintrusive Field Investigations**

**Projected date of submittal to EPA/CDPHE:**

**29 Jan 96**

**Actual date of submittal:**

**To be determined**

**Date EPA/CDPHE comments were received:**

**To be determined**

**Planned Work for August**

If the Stop Work Order is lifted, the preparation of the OU 14 TM 1 will restart.

**Problems**

Stop Work Order for the Industrial Area Operable Units may delay the completion of the Technical Memorandum for Stage I Field Investigations.

**Open Items**

None.

## 2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is comprised of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included in the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA FO.01 and FO.02 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. Characterization is complete. Results show no contamination present and no evidence of release of contaminants.

### Scope of Work

#### Changes This Period

None

### Technical Approach

#### Changes This Period

In an agreement between the regulatory agencies and DOE, the Final Proposed Plan and Draft RCRA Permit Modification remedy is as follows:

- All six OU 15 IHSSs will be clean closed according to RCRA.
- IHSSs 178, 211, and 217 will be No Action.
- IHSSs 204, 179, and 180, as part of the respective buildings and not as IHSSs, will be deferred until final building disposition.

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92
Submit Draft Phase I RFI/RI Report	25 Jul 94
Submit Final Phase I RFI/RI Report	16 Dec 94

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned</u> <u>Date</u>	<u>Approved</u> <u>Extension</u> <u>Status</u>	<u>Forecast</u> <u>Date</u>
Submit Final Corrective Action Decision/ Record of Decision			30 Sep 95

**July Work Activity Status**

On June 21, 1995 the Public Hearing for the Proposed Plan/Draft RCRA Permit modification was completed.

**Technical Memoranda****Project****OU 15 - Inside Building Closures****TM 1****TM Title****TM Status****Field Sampling Plan**

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE:

8 Feb 94

Actual date of submittal:

28 Feb 94

Date comments were received:

Preliminary

17 Mar 94

Formal

EPA 04 May 94

CDPHE 07 Apr 94

**TM 2****TM Title****TM Status****Human Health and Risk Assessment**

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE:

28 Feb 94

Date comments were received:

Preliminary

17 Mar 94

Formal

EPA 04 May 94

CDPHE 07 Apr 94

**Planned Work for August**

The Draft Corrective Action Decision/Record of Decision will be reviewed by the regulatory agencies and revised per regulatory agency comments.

The Closure Plans for OU 15 will be finalized.

**Problems**

None.

**Open Items**

CDPHE indicated that a Closure Plan for OU 15 must be submitted for public review and comment prior to closure of OU 15 via a CAD/ROD. A draft Closure Plan for OU 15 was provided by CDPHE and will be finalized during August.

## **2.16 SITEWIDE ACTIVITIES**

Sitewide activities include several tasks that comprise a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the general Rocky Flats Environmental Technology Site ER activities. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

### **Scope of Work**

**Changes This Period**                      None.

### **Technical Approach**

**Changes This Period**                      None.

### **IAG Milestone**

#### **Accomplishments**

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Annual Treatability Study Report	04 Mar 94
Submit Draft IA IM/IRA Decision Document	23 Mar 94
Submit Draft IA IM/IRA Responsiveness Summary	28 Oct 94
Submit Final IA IM/IRA Decision Document	21 Nov 94
Submit Final Annual Treatability Study Report	10 Mar 95

### **Future Milestones Through FY96**

None.

## **July Work Activity Status**

## **Sitewide Treatability Studies**

Cleanup and Recover (CURE) Waste Water Treatment System Site Demonstration - During July 1995, the following items or issues were covered:

- The DOE RFFO has completed a NEPA Categorical Exclusion determination for this project.
- The EPA has approved the Final Draft Demonstration Plan and Quality Assurance Project Plan (QAPP).
- The Integrated Work Control Program (IWCP) work package is completed. Approval is awaiting completion of the Health and Safety Plan which is nearly done.
- All training for offsite personnel has been completed.
- Lung counts have been completed for 9 of 11 offsite persons scheduled to work at the CURE site. The remaining two have been scheduled.
- The CURE equipment was inspected by RFETS Safety and Radiological Engineering representatives. No major problems were found.

## **Planned Work for August**

All equipment for the CURE demonstration is scheduled to be delivered by August 9, 1995.

The public demonstration is scheduled for August 22, 1995.

## **Problems**

Vendor delays have slipped the schedule two weeks. Any additional vendor delays will affect FY95 project completion. No funding is scheduled for FY96.

## **Open Items**

None.

### **SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING**

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request. The schedules are lengthy, and, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

#### **3.1 SURFACE WATER AND SEDIMENTS**

##### **Clean Water Act and AIP Compliance Monitoring**

Routine Site surface-water monitoring is accomplished by the Surface Water Group. Monitoring for NPDES permit compliance occurs daily at selected NPDES-permitted outfalls. Site detention ponds A-4, B-5, and C-2 are sampled prior to discharge of the ponds to assure that water quality meets Big Dry Creek Basin Segment 5 water-quality standards. The detention pond monitoring is done to comply with the Agreement in Principle (AIP) between DOE, the State of Colorado, and the local communities. In addition, Pond C-1 has been monitored on a weekly basis to evaluate radionuclide content of Woman Creek which discharges off-site continuously. A routine spill-control monitoring program is implemented as a Best Management Practice to evaluate the quality of waters contained in valve vaults, utility pits, secondary containment structures, and other areas, for selection of appropriate treatment alternatives. The following indicates the general sampling locations and approximate average sample collection frequency for compliance monitoring.

<u>Location</u>	<u>Sampling Frequency</u>
995 Effluent	37
Pond B-3	16
Pond A-4 Dis.	40
Pond A-4/B-5	31
Pond A-4/B-5/C-2	27
Pond C-2	9
Pond C-2 Dis	7
Pond A-3 Dis.	4
Pond A-3	2
Pond B-5 Trans.	1
New Landfill	4
995 Effluent	18
995 Influent	16
Walnut & Indiana	10
Pond C-1	16
Terminal pond	3
750/904 Pads	3
"Ponds A1,A2"	8
Monthly	250
Annual	2997



## IAG Compliance Monitoring

Routine monitoring for IAG/CERCLA objectives is done at selected Interim Measure/Interim Remedial Action (IM/IRA) facilities to monitor water-treatment performance and at Industrial Area storm water and building outfalls for the Industrial Area IM/IRA Transition Verification Monitoring Program (IA IM/IRA). Samples are collected quarterly at three locations (SW039, SW060, and SW132) in the OU 2 Mound Area to evaluate the performance of the OU 2 IM/IRA treatment facility. Quarterly samples from the OU 4 Interceptor Trench Sump (a.k.a. Central Sump) have been collected to monitor potential impacts of contaminated groundwater from OU 4 to North Walnut Creek. OU 1 monitoring occurs quarterly at stations SW035, SW036, SW038, SW070, and the Building 881 Footing Drain (SW13494).

The IA IM/IRA monitoring program uses 13 continuously recording stream gaging stations located in and immediately adjacent to the Site Industrial Area to monitor the quantity and quality of storm water runoff from areas where Transition activities (waste management, material stabilization, decontamination/decommissioning) are occurring or are scheduled to commence. The gaging stations are equipped with flumes or weirs and continuously recording flow meters that are linked to automatic water samplers. The automatic samplers are triggered by the flow meter to collect storm water runoff and/or discharges from buildings via footing drains and various other sources. Selected IA IM/IRA stations also include continuously recording water-quality probes and radio telemetry equipment for real-time data acquisition and supervisory control of the monitoring equipment. Samples are collected once per month at each station provided that water (i.e., storm runoff) is present at the stations. Expansion of the IA IM/IRA monitoring network will evolve with the expansion of Industrial Area Transition activities. The following is a list of the IA IM/IRA program analytical protocol.

- total metals
- dissolved metals
- total radionuclides (plutonium, uranium, americium)
- radiation screen
- water quality parameters
- nitrate/nitrite
- total phosphorous
- volatile organics
- semi-volatile organics
- pesticides/PCBs
- total organic carbon.

### **3.2 SOILS**

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

### **3.3 GROUNDWATER**

The groundwater sampling program has been reduced for the duration of the fiscal year (third quarter 1995) from nearly 300 wells to approximately 150 wells. RCRA compliance wells, IM/IRA wells, boundary wells, and a few other select wells will be monitored. Most OU sampling has been canceled because of Stop Work Orders. Fourth quarter sampling will be dependent upon funding for fiscal year 1996.

The Well Evaluation Project which is an overall evaluation of the Groundwater Monitoring Program is continuing. This project will evaluate and make recommendations for the future configuration of the program. The completion date for the project is September 1995.

Groundwater samples are routinely sampled for the following:

Radiochemical Parameters

Gross Alpha  
Gross Beta  
Plutonium  
Americium  
Strontium  
Tritium  
Uranium  
Cesium

Inorganic Parameters

Nitrate/Nitrite  
Phosphorous  
Ammonia  
Total Dissolved Solids  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
Total Suspended Solids  
Dissolved CLP<sup>1</sup> and additional metals  
Cyanide  
CLP<sup>1</sup> Volatile Organic Constituents

Field Parameters

Specific Conductivity  
Temperature  
Turbidity  
pH

*CLP = Contract Laboratory Program*

## SECTION 4.0 SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats Environmental Technology Site ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Dames & Moore		CMS/FS Report	Jan-92
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc., (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	
2	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock) surficial soils	
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	
2		Soil Vapor Extraction	Woodward-Clyde	Operation of Soil Vapor Extraction	
3	Assessment	CH2M Hill	RI Report		Apr-92
4	Remediation	Halliburton	Halliburton	Demobilize	Sep-91
4	Assessment	Parsons/Eng	Rust I&E Science	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling, gradation surveys, etc.	
4	Remediation	Parsons/ Eng	Science	Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky	Geraghty & Miller Mountain	Post-Closure Monitoring Plan	
4	Remediation	Halliburton		Develop Treatability Study for Pondcrete	Aug-94
4	Remediation	Halliburton		Develop Treatability Study and Conceptual Design for	Aug-94
5	Assessment	ASI	Dames & Moore; Blackhawk; GeoWalsh & Assoc.; Adv. Terra Testing	Implementation of OU 5 Work Plan through completion of the RFI/RI (excluding Environmental Evaluation)	
5	Assessment	S. M. Stoller		Implementation of the OU 5 RFI/RI Environmental Evaluation	
5	Assessment	Metcalf & Eddy	Rust	Implementation of the FS	Sep-94
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
6	Assessment	S. M. Stoller		Implementation of the Environmental Evaluation Section of OU 6 Work Plan	
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	
15	Assessment	ERM-Rocky Mtn.	G. S. Miller, Inc.	Implementation of the RFI/RI Work Plan	
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb-91
SW	Adm. Record	QuantaLex		Maintain IAG Admin. Record	
SW	Geo. Char.	Jacobs Eng		Well Abandonment and Replacement	
SW	Geo. Char.	Colorado State University		Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats	
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	
SW	Geo. Char.	Colorado School of Mines		Masters-level training program in Engineering Science and Engineering	
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	Colorado State University		Sequential Extraction	Apr-92
SW	Geo. Char.	University of Colorado		Monitoring Vadose Zone	
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan-93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	
SW	QA Support	SAIC		Develop and implement QA program and field operations oversight	
PM	Support	S. M. Stoller		Program Management Support	
PM	QA Support	SAIC		Provide Quality Assurance/Quality Control support to ER Program	

## **ACRONYMS**

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
COD	Corrective Action Decision
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RCRA	Resource Conservation and Recovery Act
RFFO	Rocky Flats Field Office
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
ROD	Record of Decision
Site	Rocky Flats Environmental Technology Site
TM	Technical Memorandum